



Non Invasive Imaging (Echocardiography, Nuclear, PET, MR and CT)

ESTIMATING THE LIKELIHOOD OF MRI IN PATIENTS AFTER ICD IMPLANTATION: A 10-YEAR PREDICTION MODEL

Poster Contributions

Poster Hall B1

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Background: To examine the likelihood that magnetic resonance imaging (MRI) conditional implantable defibrillators (ICDs) would benefit ICD-eligible patients we developed a 10-year prediction model to examine the necessity of MRI for contemporary ICD-eligible patients.

Methods: Using data from the MarketScan® Commercial Claims and Medicare Supplemental database from Truven Health Analytics, we identified patients with continuous enrollment in 2009-2012 and ICDs using ICD-9 and CPT procedure codes. Patients in the ICD group were then matched 1:1 using a combination of direct (age, gender and type of insurance plan) and propensity score matching (comorbid conditions) to patients with no record of cardiac device implantation or management (non-implant group). The survival probability to first MRI in the matched non-implant group over a four year period was estimated. Survival data was fitted with exponential functions to project a range of best fit scenarios, measured by the coefficient of determination, out to 10 years.

Results: In 9,385 matched ICD-likely patients (age=65.5±13.37; 21.9% female), Figure 1 represents the survival estimates at one to four years with the forecast models estimated that between 53% and 64% of ICD-eligible patients would need an MRI within 10 years.

Conclusion: We project that 53-64% of ICD patients will require an MRI over a ten-year time horizon, highlighting the importance of MRI conditional ICDs for this patient population.

Figure 1: MRI/MRA use by matched ICD-likely patients and forecasted need projected to 10 years.

